

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 108136/HNY	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NO 03/00257	International filing date (day/month/year) 24.07.2003	Priority date (day/month/year) 26.07.2002
International Patent Classification (IPC) or both national classification and IPC C12N1/21		
Applicant FMC BIOPOLYMER AS et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I Basis of the opinion
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 23.02.2004	Date of completion of this report 20.09.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Heimann-Pohl, B Telephone No. +49 89 2399-8713



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NO 03/00257

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-36 as published

Claims, Numbers

1-26 as published

Drawings, Sheets

1/4-4/4 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

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5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)
6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	26
Inventive step (IS)	Yes: Claims	
	No: Claims	1-4,6,8,9,11,13,14,16-25
Industrial applicability (IA)	Yes: Claims	1-26
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/NO 03/00257

1). The present application relates to mutant strains of *P. fluorescens* which produce at least 10 g alginate per liter medium. The description specifically discloses mutant strains Pf201 derived by chemical mutagenesis from NCIB 10525 and overproducer of alginate, and the thereof derived mutants Pf2012, Pf2013, Pf20118, Pf20137, Pf20118algIJΔ, Pf20118algFΔ, Pf20118AlgLH203R and Pf201MC. Furthermore the application relates to the production of the mutant strains and the uses thereof and the use of alginate.

2). Prior art

D1 (US-A-4490467) discloses *P. mendocina* mutants derived by culturing in carbenicillin, and chemical mutagenesis with nitrosoguanidine which mutants produce 20g of alginate per liter medium. The thus produced alginate was however of low molecular weight due to alginate lyase activity. D1 furthermore discloses the use of alginate in the food industry and in pharmaceuticals.

3). Reasoned statement (Box V)

Novelty (Art. 33(2) PCT)

None of the prior art documents as cited in the international Search Report (and relevant for a valid priority date) discloses the specific mutants of the present application or mutant strains of *P. fluorescens* which produce at least 10 g alginate per liter medium. Therefore the subject matter of claims 1-25 is new.

Claim 26 lacks novelty over D1 since the use of alginate is known.

Inventive step (Art. 33(3) PCT)

The problem to be solved by the present application, taking D1 as the closest prior art document, is the provision of an alternative organism which produces alginate in industrially high amounts.

The initially produced mutant strain Pf201 (internal denomination) was not predictable from the prior art, even if using a process similar to the one disclosed in D1. Likewise, this is also the case for the thereof derived strains (Pf2012, Pf2013, Pf20118,

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Pf20137, Pf20118algIJΔ, Pf20118algFΔ, Pf20118AlgLH203R and Pf201MC) The outcome of chemical mutagenesis is a chance event. However claim 1 is directed to any mutant strain of *P. fluorescens* which eventually produces at least 10 g alginate per liter medium although there is no disclosure of any other strain (contrary to the requirements of Art. 5 PCT). It follows that an inventive step cannot be acknowledged because it had not been shown that any other potential mutated position (or positions) could be a possible solution of the problem. Generally, that which is not disclosed cannot have an inventive step.

Claims 1-4, 6, 8, 9, 11, 13, 14, 16-25 lack an inventive step (since they are not restricted to Pf201, Pf2012, Pf2013, Pf20118, Pf20137, Pf20118algIJΔ, Pf20118algFΔ, Pf20118AlgLH203R or Pf201MC).